

Title (en)
HALOGEN-FREE QUATERNARY AMINIES AND USES THEREOF

Title (de)
HALOGENFREIE QUATERNÄRE AMINE UND DEREN VERWENDUNG

Title (fr)
AMINES QUATERNAIRES SANS HALOGÈNE ET LEURS UTILISATIONS

Publication
EP 3481787 B1 20240228 (EN)

Application
EP 17824718 A 20170628

Priority

- US 201662358720 P 20160706
- US 2017039678 W 20170628

Abstract (en)
[origin: WO2018009386A1] The present disclosure provides an aqueous composition comprising a quaternary amine compound neutralized with a polycarboxylic acid. The aqueous composition is particularly useful for inerting clay in cement compositions as well as compatibilizing pigments in pigment dispersions.

IPC 8 full level
C04B 24/12 (2006.01); **C04B 40/00** (2006.01); **C11D 1/04** (2006.01); **C11D 1/08** (2006.01); **C11D 1/40** (2006.01); **C04B 103/10** (2006.01)

CPC (source: CN EP KR US)
C04B 24/12 (2013.01 - EP KR US); **C04B 28/02** (2013.01 - EP KR US); **C04B 28/04** (2013.01 - CN US); **C04B 40/0039** (2013.01 - CN EP KR US); **C09D 17/00** (2013.01 - KR); **C09D 17/001** (2013.01 - US); **C09D 17/003** (2013.01 - US); **C09D 17/005** (2013.01 - US); **C09D 133/02** (2013.01 - EP KR US); **C09K 23/18** (2022.01 - CN); **C11D 1/04** (2013.01 - EP US); **C11D 1/08** (2013.01 - EP US); **C11D 1/40** (2013.01 - EP US); **C04B 2103/302** (2013.01 - KR); **C04B 2103/32** (2013.01 - US); **C04B 2111/1062** (2013.01 - EP KR US); **C04B 2111/26** (2013.01 - EP KR)

C-Set (source: CN EP US)

CN
1. **C04B 40/0039 + C04B 24/122 + C04B 24/10 + C04B 24/26**
2. **C04B 28/04 + C04B 14/06 + C04B 14/104 + C04B 2103/32 + C04B 24/122 + C04B 24/10 + C04B 24/26**

EP
1. **C04B 40/0039 + C04B 24/12 + C04B 24/2664 + C04B 2103/32 + C04B 2103/54**
2. **C04B 28/02 + C04B 14/10 + C04B 24/12 + C04B 24/2641 + C04B 2103/30 + C04B 2103/32 + C04B 2103/50 + C04B 2103/54**

US
C04B 28/02 + C04B 14/10 + C04B 24/12 + C04B 24/2641 + C04B 2103/54

Citation (examination)
EP 0986523 B1 20020410 - HONEYWELL INT INC [US]

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
WO 2018009386 A1 20180111; BR 112018067610 A2 20190212; CA 3012859 A1 20180111; CN 108698927 A 20181023; CN 108698927 B 20220809; CN 115259736 A 20221101; CN 115259736 B 20240507; EP 3481787 A1 20190515; EP 3481787 A4 20201104; EP 3481787 B1 20240228; JP 2019527739 A 20191003; JP 6951356 B2 20211020; KR 102392853 B1 20220503; KR 102412708 B1 20220624; KR 20190025536 A 20190311; KR 20220032649 A 20220315; US 11542199 B2 20230103; US 2019112229 A1 20190418

DOCDB simple family (application)
US 2017039678 W 20170628; BR 112018067610 A 20170628; CA 3012859 A 20170628; CN 201780013957 A 20170628; CN 202210918986 A 20170628; EP 17824718 A 20170628; JP 2018545291 A 20170628; KR 20187024791 A 20170628; KR 20227007196 A 20170628; US 201716071919 A 20170628